(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
13 October 2005 (13.10.2005)

PCT

(10) International Publication Number
WO 2005/095885 A1

(51) International Patent Classification[7]: G01B 9/02, G01N 29/24, G02B 26/00, G01N 29/04, 29/12

(21) International Application Number: PCT/DK2005/000221

(22) International Filing Date: 31 March 2005 (31.03.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
PA 200400512 31 March 2004 (31.03.2004) DK

(71) Applicant (*for all designated States except US*): **FORCE TECHNOLOGY** [DK/DK]; Park Allé 345, DK-2605 Brøndby (DK).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **NIELSEN, Steen Arnfred** [DK/DK]; Tellusvej 23, DK-4040 Jyllinge (DK). **THOMMESEN, Anne Marie** [DK/DK]; Langelandsvej 20A,4., DK-2000 Frederiksberg (DK). **STENUM, Bjarne** [DK/DK]; Krogerupgade 61, st.th., DK-2200 Copenhagen N (DK).

(74) Agent: **ZACCO DENMARK A/S**; Hans Bekkevolds Allé 7, DK-2900 Hellerup (DK).

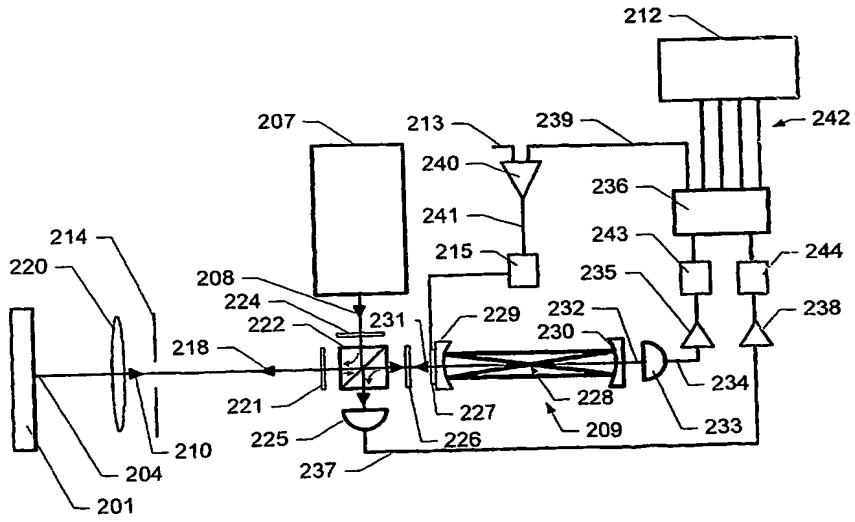
(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*

[Continued on next page]

(54) Title: NOISE REDUCTION OF LASER ULTRASOUND DETECTION SYSTEM



(57) Abstract: A method of detecting a property of an object comprising directing a detection laser beam to the object to produce a scattered laser beam modulated corresponding to a motion of said object; receiving the scattered laser beam with an optical interferometer to produce an interferometrc transmission signal and an interFerometric reflection signal; combining the transmission signal and the reflection signal to generate an output signal corresponding to the motion of the object. In one embodiment the method comprises scaling at least one of the reflection signal and the transmission signal relative to the corresponding other signal by a predetermined relative scale factor; and combining the scaled reflection and transmission signals with one another to obtain the output signal. In another embodiment, the combining comprises generating the output signal as a ratio of a signal derived from the transmission signal and a signal derived from the reflection signal.

WO 2005/095885 A1